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CERTIFICATION

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- 106594511: Use of Fresh Water Sponges in Ukraine

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, on this 26th day of February, 2009.

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Use of Fresh Water Sponges in Ukraine

By Dr. Kurt Schröder, now in the field

Many do not know that the bath sponge is the horny skeleton of a sea-dwelling animal. The sponges form a fairly large primitive animal group, which can be divided according to the different skeletal components into horny sponges, calcareous sponges and siliceous sponges. Only siliceous sponges live in fresh water (spongillids), whose uniaxial spicules are cemented by spongin (or spongiolin, a keratinous mass). The animal pieces are widespread in fresh water. Many species live in flowing water, where they coat

wood and other objects crust-like near the surface; other species form branched upright pieces in stagnant water, generally at greater depth.

It has long been known that the dried, dead animal bodies are used in folk medicine in Russia. Reports or pictures of this, however, only rarely reach Germany. As a result of the conquest of Ukraine by our troops it was possible to obtain information on collection, preparation and use of this drug.

The sponge drug, called badiaga or *Spongia fluviatilis* in pharmacies, is used in the

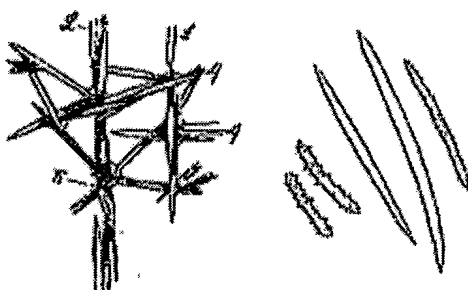
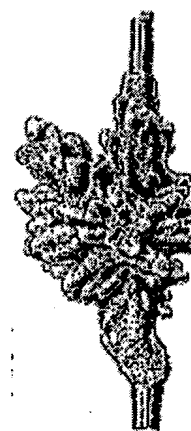
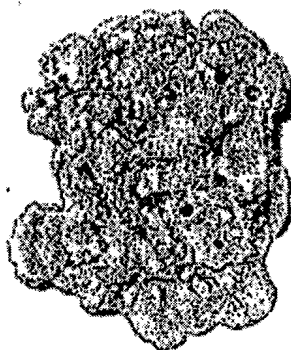
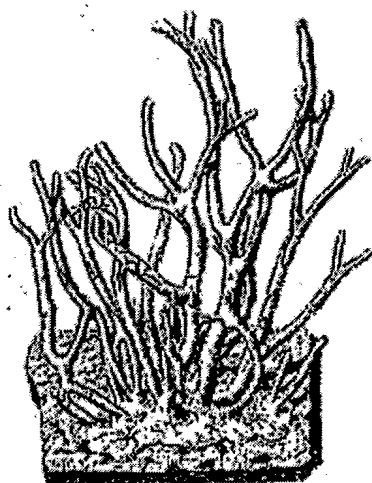


Figure 1 (left). The silica spicules of a fresh water sponge (*Ephyatia fluviatilis*) lying in the skeleton. Figure 2 (right). Same isolated from another sponge (*Spongilla fragilis*).



Figures 3-6 (from left to right). Growth forms of two fresh water sponges. Figure 3. *Spongilla lacustris* on masonry. Figure 4. on a wool thread. Figure 5. *Ephydatia fluviatilis* usually grows in the form of a crust but sometimes, as in Figure 6, forms apparent branchings

[illegible]

powdered state. Grinding is conducted between the fingers. In folk medicine the powder is rubbed into the chest or back against lung pain, cough and onto the painful site in leg and foot pain. In addition to dry application of the powder, the sponge drug, however, is also used to prepare a tincture and a salve. The tincture consists of a mixture of 10 parts badiaga and 90 parts alcohol or petroleum; the salve is mixed from badiaga, alcohol and bone marrow or lard in a ratio 1:2:2. Only a few reports state that, in addition to purely



Figure 7. Crust-like fresh water sponge on tree bark from the Samara River at Dnepropetrovsk

external application of sponge powder, it is also applied internally against rheumatism, dropsy and to increase gastric acid content. Naturally here only an extract of badiaga in alcohol is considered.

The drug is also used medicinally in Russia, specifically as a liniment, sometimes with decided success. However, one is warned against unduly strong application of the agent, since extremely serious irritation of the skin can occur, which is similar to skin burns and leads to suppuration on entry of streptococci.



Figure 8. Badiaga drug from the pharmacies in Kremenchug and Dnepropetrovsk

Treatment of patients suffering from excessive use of badiaga is extremely difficult because of the impossibility of removing the fine silica spicules of the spongillids rubbed into the skin. Internal administration of badiaga tincture should be provided according to a physician's evaluation for disturbances in kidney activity.

In addition to use of the sponge drug for medical purposes, this is also used, however, as a makeup by girls. The internal surface of the first joint

of the index finger is moistened and dipped in the sponge powder. The cheeks and lips are rubbed with the amount of sponge powder adhering to it. After some time skin redness occurs, which can persist for a long time.

A report of a Russian physician who stated during a military medical examination that a soldier used badiaga abusively in order to evade military service by feigning a skin disease was of interest.

The fresh water sponges are mostly collected by fishermen as a secondary occupation. The collection time lies between August and November until the

onset of frost. The sponge crusts are loosened from the rocks or pieces of wood. In some parts of the Samara River, a left tributary of the Dnepr at Dnepropetrovsk, bushes are thrown in as bait for the fish. The spongillids collect on them; only few in the first year but abundantly in the second year. The sponge masses reach a thickness of usually 5 to 6 cm.

Retrieval of the branches occurs by means of a rod, on the bottom of which a hook is situated. The sponges are stripped from the branches, placed in the boat and the branches thrown back into the water. In this case a selection already occurs. The yellow sponge masses are preferred; the older black ones are only sometimes taken but are generally thrown away. The pieces are rarely recovered green. One man from morning to evening was able to fill roughly half a boat about 4 m long. The native population states that the product smells like "mud." This means the spongillids have a peculiar musty odor.



Figure 9. Samples of badiaga salve and oil from Ukrainian

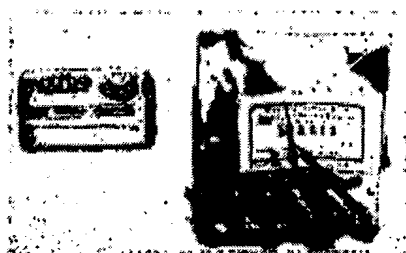


Figure 10 (left). In these packages I purchased the powder in the pharmacy in Kirovograd

Figure 11 (right). The sponge powder, strongly magnified



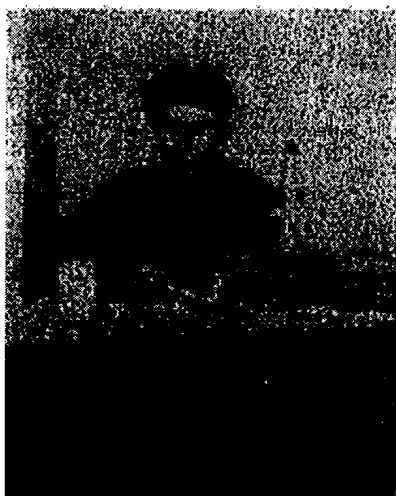


Figure 12. Prisoner of war physician during preparation of badiaga salve, oil and tincture.

The moist sponge material is not compressed, but left as it was recovered. On return the sponge pieces are placed on boards to dry in the sun. In rare cases moist pieces also go for sale at the outdoor market. The largest amounts go to pharmacies, whereas smaller amounts are stored by the population in canvas sacks in a dry room. The drug is referred to by the native population as "nadoshnik," which is modified in



Figure 13. Russian medic during rubbing of badiaga salve with a bandage onto the back of a prisoner of war.

Kirovograd to "ladoshnik," in Makeevka to the east of Stalino to "ladeshnik"

During the present war the nadoshnik could only be obtained on the open market at the outdoor markets in the cities on rare occasions. It was sometimes offered in 0.2 g to 0.24 g pieces, sometimes in powder form. A teaspoonful is considered a weight unit, which is about 2.84 g. The drug list in the pharmacy in Kirovograd gave the state cost price for this drug as 3.85 rubles for 1 kilo; the selling price before the war was



Figure 14. Purchasing of sponge powder at the outdoor market in Makeevka

20 rubles. The selling price during the war was quite different; sometimes I paid 0.03 to 0.04 RM for 10 g, another time 0.50 RM for 30 g. The total sales amount in pharmacies for this drug in Ukraine could not now be determined; however, the comment of the central office in Kirovograd, which includes 12 districts with 30 pharmacies, is of interest. Before the war it annually sold about 50 kg!